

Appendix G – Correspondence, 404b1, Draft FONSI

Morton Arboretum Section 206



September 2011

Study Partnership

Morton Arboretum
Forest Preserve District of DuPage County
U.S. Army Corps of Engineers (USACE)



US Army Corps
of Engineers®
Chicago District



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CHICAGO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
111 NORTH CANAL STREET
CHICAGO IL 60606-7206

Planning Branch
Environmental Formulation Section

Kenneth Westlake, Chief
Environmental Review Branch
U.S. EPA ME-19J
77 West Jackson
Chicago, IL 60604

Dear Mr. Westlake:

The Chicago District is preparing a National Environmental Policy Act (NEPA) document on impacts of planned ecosystem restoration at the Morton Arboretum in Lisle, DuPage County, Illinois. As part of the scoping process the Chicago District would appreciate your comments. A map of the area is attached.

The project will restore the riverine and riparian zone functions along a portion the East Branch of the DuPage River. This will be done by converting portions of the present channelized ditch into a meandering stream with the addition of riffles and instream habitation structures. Invasive plant species will also be removed and native plant communities reestablished.

I am particularly interested in your comments regarding impacts to aquatic habitat and threatened or endangered species. Please reply within 30 days, marking your reply to the attention of Mr. Peter Bullock, U.S. Army Corps of Engineers, 111 North Canal Street, Suite 600, Chicago, Illinois 60606. Questions may be directed to Mr. Bullock at 312/846-5587, or at peter.y.bullock@usace.army.mil. Your assistance is appreciated.

Sincerely,

JS
Susanne J. Davis, P. E.
Chief of Planning Branch

Enclosure

MFR: Routine scoping letter as required by NEPA.

Bullock PM-PL-E *12/14/10*
Fleming ~~PM-PL-E~~ *7 12/14/10*
Nguyen PM-PM *MUN 12/14/10*
Davis PM=PL-E *SD 12/14/10*



Illinois Historic Preservation Agency

1 Old State Capitol Plaza • Springfield, Illinois 62701-1512 • www.illinois-history.gov

DuPage County
Lisle

PLEASE REFER TO: IHPA LOG #032122010

4100 IL Rt. 53 along the East Branch of the DuPage River
Ecosystem Restoration, Morton Arboretum

January 11, 2011

Peter Bullock
Department of The Army
U.S. Army Corps of Engineers
Chicago District
111 North Canal Street, Suite 600
Chicago, IL 60606

Dear Mr. Bullock:

We have reviewed the documentation submitted for the referenced project(s) in accordance with 36 CFR Part 800.4. Based upon the information provided, no historic properties are affected. We, therefore, have no objection to the undertaking proceeding as planned.

Please retain this letter in your files as evidence of compliance with section 106 of the National Historic Preservation Act of 1966, as amended. This clearance remains in effect for two (2) years from date of issuance. It does not pertain to any discovery during construction, nor is it a clearance for purposes of the Illinois Human Skeletal Remains Protection Act (20 ILCS 3440).

If you are an applicant, please submit a copy of this letter to the state or federal agency from which you obtain any permit, license, grant, or other assistance.

Sincerely,

Anne E. Haaker
Deputy State Historic
Preservation Officer



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

JAN 27 2011

REPLY TO THE ATTENTION OF:

E-19J

Peter Bullock
U. S. Army Corps of Engineers
Chicago District
111 North Canal Street, 6th Floor
Chicago, Illinois 60606

Re: Scoping for Ecosystem Restoration Project, Morton Arboretum, Lisle, DuPage County, Illinois

Dear Mr. Bullock:

The NEPA Implementation Section has received the scoping request for the ecosystem restoration project at the Morton Arboretum in Lisle, DuPage County, Illinois. At this time, we recommend the following be addressed in the forthcoming NEPA documents.

Indirect Impacts

- Once the river system has re-stabilized, what are the anticipated impacts, if any, to river morphology as a result of converting portions of the East Branch of the DuPage River from a channelized ditch to a meandering stream (e.g., stream load, turbidity, sediment accumulation, erosion, etc.)? How will the re-direction of energy cause downstream changes to the form and function of the river? How does this impact water quality?

Measures of Success:

- What measures of success will be used? At what stage of the project (i.e. planning, design) will measures determined?

Monitoring/Maintenance

- Which entity(s) (i.e. ACE, state agency, NGO, local) will handle monitoring/maintenance activities and costs?
- If an entity other than ACE will be responsible for monitoring/maintenance activities and costs, will the ACE be involved in these activities to ensure agreed-upon standards are met?

Thank you for the opportunity to submit comments on this project. We look forward to receiving future information about this project. If you have any questions concerning these comments, please contact Elizabeth Poole of my staff at (312) 353-2087 or poole.elizabeth@epa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth A. Westlake". The signature is fluid and cursive, with a large loop at the end.

Kenneth A. Westlake
Chief, NEPA Implementation Section
Office of Enforcement and Compliance Assurance

MEMORANDUM FOR RECORD

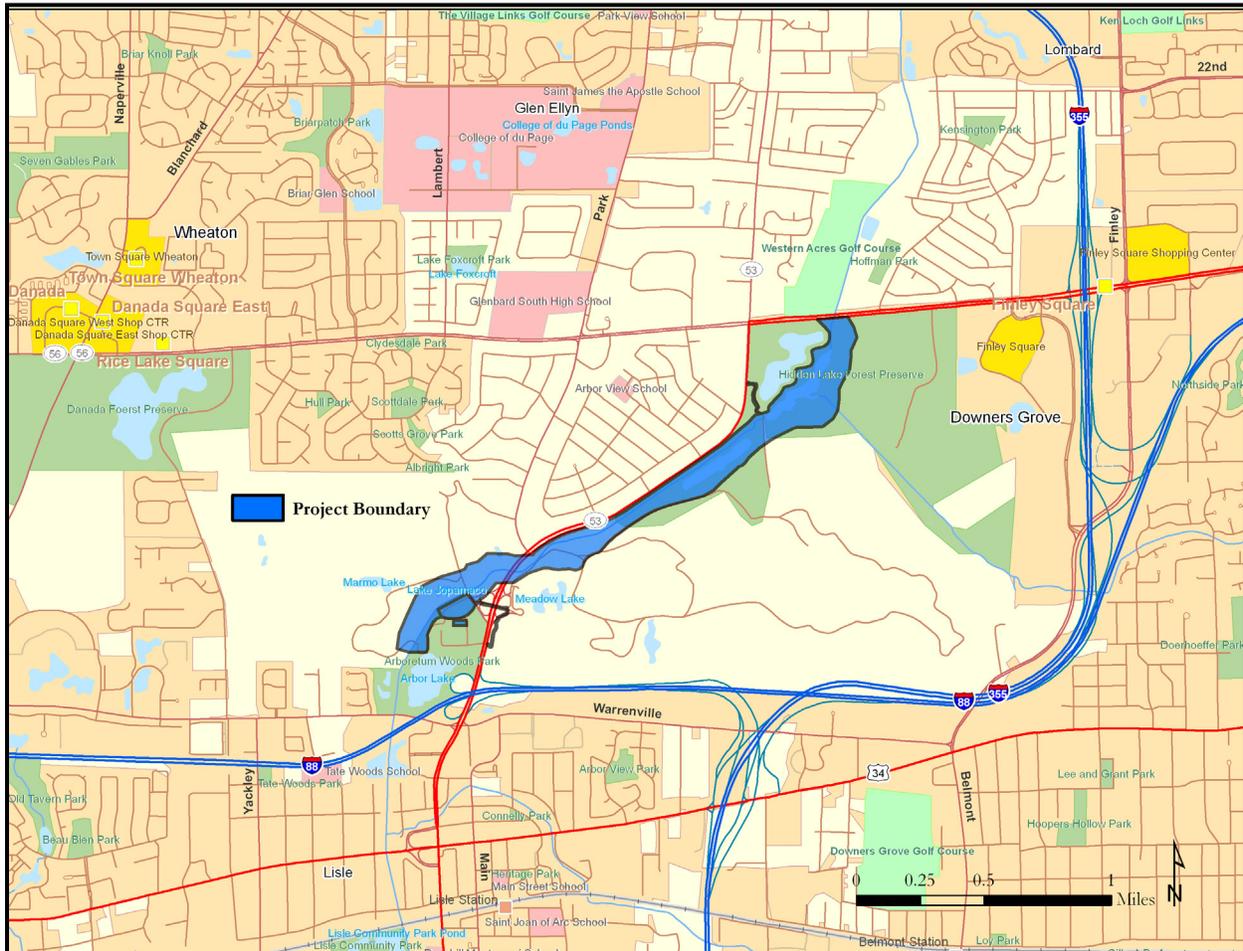
TO: US Fish & Wildlife Service, Region 3 Barrington Field Office

FROM: Frank Veraldi, Restoration Ecologist, US Army Corps of Engineers, Chicago District

DATE: 07 March 2011

SUBJECT: Section 7 Endangered Species Act Consultation – Morton Arboretum Section 206 Restoration Project – No Effects Determination

The Morton Arboretum Section 206 restoration area is an undeveloped area of about 112-acres located in DuPage County, Lisle, Illinois. The restoration is approximately a 2.5-mile reach of the DuPage River East Branch, between Butterfield Road and Interstate 88 in DuPage County, IL.



Historically, the stream corridor and riparian zone was dominated by several naturally occurring cover types such as wetlands, forests, savannas and prairies. By the late 1800s, much of these cover types, particularly prairies, savannas and wetlands, were converted to agricultural, urban or industrial use. Subsequently, there was a significant loss of biodiversity within the last one hundred years and side effects such as an increase in flooding events and a decrease in water quality. Furthermore, the remnant parcels of natural cover types are under pressure from continued human activities. Human induced disturbances to the remaining natural areas include fire suppression, altered hydrology and hydraulics, increase colonization of invasive species and

fragmentation. While cover types can be described in terms of dominant organisms, the quality of their habitat is directly related to the level at which natural processes function, such as groundwater discharge, fire or fluvial erosion and deposition. The following resource problems could be addressed at the Morton Arboretum site:

- Altered floodplain hydrology stemming from stream channelization & vegetation clearing
- Riverine geomorphic impairment from channelization
- Riverine hydraulic impairment from channelization
- Water quality impairment stemming from waste water discharge and urbanization
- Establishment of invasive species monocultures
- Loss of conservative and rare plant and fish species

The County Distribution of Federally-listed Threatened, Endangered, Proposed and Candidate Species was reviewed for DuPage County by the Chicago District. The following Federally listed species and their critical habitats are identified by the USFWS as occurring within DuPage County:

- Eastern massasauga (*Sistrurus catenatus*) – Graminoid dominated plant communities (fens, sedge meadows, peatlands, wet prairies, open woodlands, and shrublands)
- Hine's emerald dragonfly (*Somatochlora hineana*) – Spring fed wetlands, wet meadows and marshes
- Eastern prairie fringed orchid (*Platanthaera leucophaea*) – Moderate to high quality wetlands, sedge meadow, marsh, and mesic to wet prairie
- Leafy-prairie dower (*Dalea foliosa*) - Prairie remnants on thin soil over limestone
- Mead's milkweed (*Asclepias meadii*) – Late successional tallgrass prairie, tallgrass prairie converted to hay meadow, and glades or barrens with thin soil
- Prairie bush clover (*Lespedeza leptostachya*) – Dry to mesic prairies with gravelly soil

Habitats that will be restored through this project include stream, hemi-marsh, floodplain forest, and oak woodland. Recent surveys done by the USACE Chicago District and Forest Preserve District of DuPage County, found no federal or state listed species or viable critical habitats within the restoration site. For these reasons, we conclude the Morton Arboretum Section 206 Restoration Project will have “no effect” on listed species or proposed or designated critical habitat.

Frank M. Veraldi
Restoration Ecologist/Fish Biologist
USACE, Chicago District

CC: Illinois DNR – Pat Malone

From: [Malone, Pat](#)
To: [Veraldi, Frank M LRC](#)
Subject: RE: Morton Arboretum Section 206 - No Effects Determination (UNCLASSIFIED)
Date: Tuesday, March 08, 2011 10:01:55 AM

Frank,

I support this project and the restoration of habitat it would provide and concur with your memo to USFWS.

Pat

From: Veraldi, Frank M LRC [Frank.M.Veraldi@usace.army.mil]
Sent: Monday, March 07, 2011 10:58 AM
To: Shawn_Cirton@fws.gov; Cathy_Pollack@fws.gov; Malone, Pat
Cc: Bullock, Peter Y LRC; Nguyen, Mike LRC
Subject: Morton Arboretum Section 206 - No Effects Determination (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Shawn and Cathy,

Attached is our "no effects" determination for the Morton Arboretum Section 206 aquatic ecosystem restoration. We are planning on sending the Feasibility Study and NEPA document out sometime in the May/June time frame.

I copied Pat Malone from DNR on this memo as well. Pat, as we discussed, you can just reply with an email if you support or have concerns. You get to comment again during the NEPA period.

Cheers

Frank M. Veraldi
Fish Biologist / Restoration Ecologist
US Army Corps of Engineers
Environmental Planning Section
111 N. Canal Street, Suite 600
Chicago, IL 60606
PHN: 312-846-5589
FAX: 312-886-2891

Classification: UNCLASSIFIED
Caveats: NONE

PRELIMINARY SECTION 404(B)(1) EVALUATION

Morton Arboretum Section 206 DuPage County, Illinois

May 2011

I. Project Description

a. Location

The study area is located in DuPage County, Illinois (Figure 1) within the Morton Arboretum and FPDDC properties. The restoration reach is approximately a 2.5-mile reach of the DuPage River East Branch (DREB), between Butterfield Road and Interstate 88 in DuPage County, IL (Figure 2). Plate 01 shows the 2009 aerial view of the project reach. The study area consists of a channelized ditch, pockets of floodplain marsh and floodplain forest and oak woodland. Man made features that intermingle and border the site include roads, bridges, ornamental plant groves, industrial facilities, railroads, strip malls and residential developments.

Figure 1 – The Morton Arboretum location within the Chicago Region.

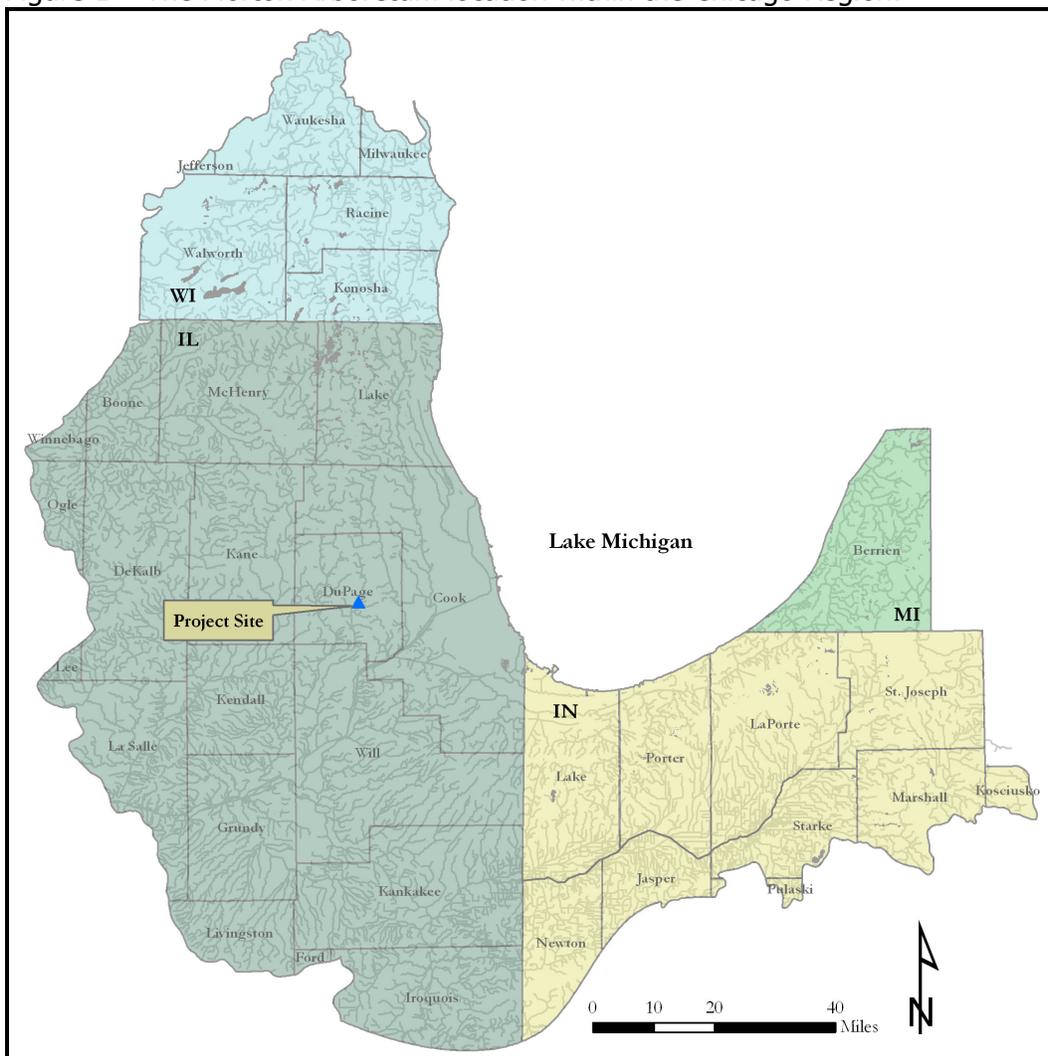
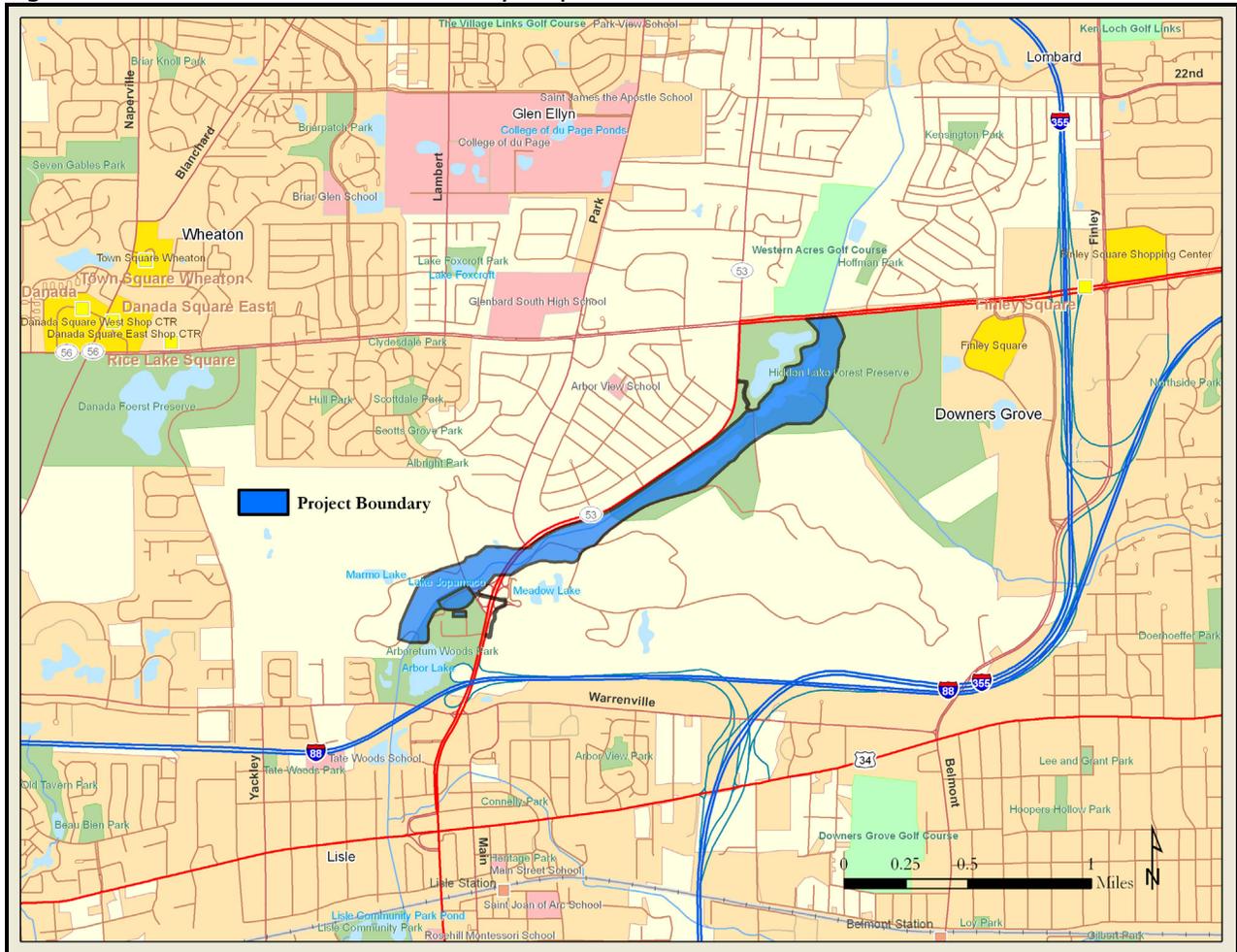


Figure 2– The Morton Arboretum Vicinity Map.



b. General Description

The recommended plan includes the following measures:

In the recommended plan, the stream channel of the DuPage River East Branch will be restored to increase instream habitat structure. Riffles and boulder clusters will be placed in the channel to provide hydraulic diversity, instream habitat structure and to reduce erosion and channel widening by directing flow towards the middle of the channel. These habitat features will provide instream habitat for macroinvertebrates and fishes. Root wads will also be placed within the channel adding to the habitat structure and diversification of hydraulics. In addition to channel restoration, the stream banks would be graded and terraced, stripped of invasive and non-native vegetation and replanted with appropriate native vegetation.

The NER plan also recommends for the restoration of native plant communities throughout the site. Approximately 112-acres of the project area will be eradicated of invasive and non-native vegetation via herbicide application and hand removal. Woody species will also be thinned in areas having dense canopy to allow sunlight to infiltrate the understory, hence allowing the growth of a rich herbaceous layer. In all, 8,750-feet of instream habitat, 3-acres of marsh, 51.6-

acres of floodplain forest, and 27.7-acres of oak woodland will be restored with native vegetation indicative of these plant communities.

c. Authority and Purpose

This study is authorized under Section 206 of the Water Resources Development Act (WRDA) of 1996, as amended. Authority is given to plan, design, and construct projects to restore aquatic ecosystems and associated habitats nationwide. Restoration includes activities that improve a site's ecosystem function, structure, and dynamic processes to a less degraded and more natural condition, and/or manage contaminants that allow the site to be safely used for ecological and/or economic purposes. Projects are justified by ecosystem benefits, clean-up of contaminated sites, public health, safety, economic benefits or any combination of these.

The DREB was first channelized in the project area during the 1920s for agricultural purposes. Since then, rapid urbanization of the watershed has increased the amount of impervious surfaces and has caused erratic riverine hydraulics. During the 1950s, the Valley View subdivision was constructed with over one hundred single-family homes within the natural floodplain of the DREB. Aside from severely affecting the riverine of ecology, flood events have caused millions of dollars in damage to homes within the subdivision. To reduce these damages, extensive stream channelization was implemented during the 1970s in an attempt to relieve flooding by increasing the channel conveyance, but without success, and in turn further adversely affecting riverine ecology.

The Morton Arboretum, in partnership with the Forest Preserve District of DuPage County (FPDDC), Illinois Department of Transportation (IDOT), and Illinois Department of Natural Resources have requested that the Chicago District, US Army Corps of Engineers (USACE) initiate a Feasibility Study (FS) under the Section 206 Aquatic Ecosystem Restoration authority to ascertain the feasibility of restoration features to restore ecological integrity of the river and riparian zone on Morton Arboretum and Forest Preserve properties. The associated report has evaluated the feasibility and environmental effects of restoring: riverine habitat, hydrology, riparian vegetation, floodplain forest, and wetland. The scope of this study addresses the issues of altered hydrology and hydraulics, native plant community preservation, invasive species, connectivity, rare wetland communities, and native species richness.

d. Proposed Fill Material

1) General Characteristics

Fill material consists of:

Eleven cobble riffles (11), five (5) boulder clusters, one (1) boulder control structure, and (1) cobble bar, which all consist of glacial boulders and cobble, placed in the DREB. All structures placed in the stream will be situated as to direct flow towards the middle of the channel to prevent channel migration and bank erosion, while providing important fluvial hydraulic functions of inducing critical flows and other turbulence necessary for lotic species. Fill materials used to establish the rock structures will be free from the presence of environmental contaminants and will contain less than 5% fines.

2) Quantity

The proposed activity would require placement of ~1,500 cubic yards of glacial boulder and cobbles to create the structures.

3) Source

Glacial boulder and cobble material for the proposed construction will be clean, inert materials obtained from a commercial supplier.

e. Proposed Discharge Site

1) Location

The proposed fill activity would occur in select locations of a 2.5-mile reach of the DREB with the Morton Arboretum and Forest Preserve District of DuPage County lands, as presented on Plate 06 of the Feasibility Report.

2) Size, Type, and Habitat

The DREB's watershed encompasses 81-mi² of central DuPage and northern Will Counties. The major tributaries are St. Joseph and Prentiss Creeks. Flowing from its headwaters for approximately 26-miles, it becomes confluent with the West Branch of the DuPage River at the Bolingbrook municipal line to form the main stem of the DuPage River, which eventually becomes confluent with the Des Plaines River. Sixteen municipalities are located within the watershed. A total of 11 publicly owned treatment plants discharge to the East Branch as does one combined sewer overflow. The land uses found in the East Branch watershed are mostly residential and urban. Measured at the USGS station at Bolingbrook (station 05540250), annual mean flow for the river is 109-cfs (calculated from data for water years 1989-2004).

The stream channel is a channelized stream. The DREB was channelized and is not longer allowed to meander freely within its active floodplain. Stream habitat in this portion of the system is typical of a channelized ditch having low diversity of hydraulic flow parameters and minimal instream structure.

3) Timing and Duration of Discharge

Construction of project features in the DREB may begin as early as fall 2012 and may end as early as winter 2012. Placement of the cobble structures are expected to require 2 - 4 weeks construction duration.

f. Placement Method

Boulders and cobble will likely be brought to the project site by truck and will be placed into position using a small backhoe and adjusted by hand if need be.

II. Factual Determinations

a. Physical Substrate Determinations

1) Substrate Elevation and Slope

Ditch bottom elevations in the project area range from elevation 660 ft to 666 ft NAVD88, which is a slope of 0.0006%. This is a flat section of stream.

2) Sediment Type

Surveys during summer 2010 revealed that the primary substrate of the restoration reach within the channel primarily consisted of sand and small gravel. Small gradient breaks had larger substrates of large gravel and cobble due to the slight increase in water velocities. Also present were abundant pockets of silt, muck and detritus.

3) Material Movement

There would be no significant movement of fill material after construction. Placement of cobble structures and woody debris will encourage sand/sediment accretion upstream of the cobble bar and direct water flow to the center of the restored stream channel. Stone selected for establishment of cobble bars are sized to withstand flood stage hydraulics.

4) Physical Effects on Benthos

Existing benthos directly beneath where the boulders would be placed would temporarily be covered, but the area is so small it would have insignificant effects on the macroinvertebrate population. Effects to the benthic invertebrate assemblage would be positive through the enhancement of riverine hydraulics, which makes it more conducive for species richness to increase. These minor impacts are necessary to create improved conditions for benthic invertebrates. There are no significant adverse effects expected.

5) Other Effects

There would be no other significant substrate impacts.

6) Actions Taken to Minimize Impacts

No special measures would be taken to minimize the temporary or long-term impacts on physical substrates associated with the proposed activity.

b. Water Circulation, Fluctuation, and Salinity Determinations

1) Water

The proposed fill activity would have no significant negative impacts to water chemistry, water clarity, color, odor, taste, dissolved gas levels, nutrients, or increased eutrophication as a result. Improvements in water clarity, color, dissolved oxygen levels, and levels of eutrophication will be noted in the long-term after placement of the cobble riffles and boulder clusters.

2) Current Patterns and Circulation

The current patterns and circulation in the DREB will be altered after the placement of cobble riffles and boulder clusters to mimic a natural stream. The cobble riffles and boulder clusters will diversify flows and induce critical flows that are necessary for lotic organisms. Cobble riffles will be constructed to encourage the stream channel to flow towards the center of the channel and prevent channel migration into Route 53 or into the Arboretum. Sediment accretion upstream of the cobble riffles will encourage the development of sand/gravel bars and downstream would create deeper holes, thusly diversifying the morphology of the stream. The volume of water flowing through the DREB would not be altered and the hydrologic regime both upstream and downstream would not be significantly altered by the proposed activity. There are no significant adverse effects expected.

3) Normal Water Level Fluctuations

The proposed fill activity would have no significant impact on normal water level fluctuations upstream or downstream. State and county permits will be applied for and adhered to.

4) Salinity Gradients

Not applicable to freshwater environments.

5) Actions Taken to Minimize Impacts

No special measures would be taken to minimize the temporary effects of minor turbidity. Construction activities are expected to create less turbidity than a normal summer thunderstorm event.

c. Suspended Particulate/Turbidity Determinations

1) Expected Changes in Suspended Particulates and Turbidity in Vicinity of Fill

There would be minor increases in suspended particulates and turbidity levels in the immediate area of the proposed fill activity during construction. Construction activities are expected to create less turbidity than a normal summer thunderstorm event.

2) Effects on Chemical and Physical Properties of Water Column

There would be negligible effects to light penetration or dissolved oxygen levels during construction. There are no known toxic metals, organics, or pathogens in the construction area. The placement of clean fill will not introduce metal, organic, or pathogens to the project area. Aesthetics would be improved in the long-term after a natural stream channel is established in the area.

3) Effects on Biota

No significant, adverse effects on aquatic biota are expected to result from turbidity or suspended particulates associated with the proposed fill and sediment movement activity.

4) Actions Taken to Minimize Impacts

No special measures would be taken to minimize the temporary turbidity impacts associated with the proposed activity. Construction activities are expected to create less turbidity than a normal summer thunderstorm event.

d. Contaminant Determination

The proposed fill material would not introduce any new contaminants into the DREB, or release any significant amounts of existing contaminants if through bottom disturbance in the construction zone.

e. Aquatic Ecosystem and Organism Determinations

1) Effects on Plankton

No effects on light penetration are expected.

2) Effects on Benthos

Refer to section II.a.4)

3) Effects on Nekton

Fish eggs and larvae would not be smothered by the proposed fill activity since the anticipated construction activities will occur during non-reproductive or rearing seasons. Fish and other free-swimming organisms will tend to avoid the construction area; the construction area will be used again by those organisms soon after construction ends.

4) Effects on Aquatic Food Web

Beneficial improvements to the food web are expected due to expected increases in macroinvertebrate richness and abundance.

5) Effects on Aquatic Sites

- a) Sanctuaries and Refuges – none present; no significant impact
- b) Wetlands – increase in hydrophytic vegetation
- c) Mud Flats – none present; no significant impact
- d) Vegetated Shallows – increase in submergent aquatic macrophytes
- e) Coral Reefs – not applicable to freshwater environments
- f) Riffle and Pool Complexes – would increase along the new stream channel

6) Threatened and Endangered Species

The proposed project area currently does not provide critical habitat for Federal or state listed species or are Federal or state listed species present at the site. A memorandum determining “no effects” was provided to the Region 3 USFWS dated 07 March 2011. Coordination with the Illinois Department of Natural Resources and the US Fish and Wildlife Service did not indicate

the presence of listed species their critical habitats in a letter dated 29 October 2003 and in email correspondence on 08 March 2011.

7) Other Wildlife

No other wildlife would be adversely impacted by the proposed activity.

8) Actions Taken to Minimize Impacts

General construction scheduling and sequencing would minimize impacts to reproducing macroinvertebrates and fishes.

f. Proposed Discharge Site Determinations

1) Mixing Zone Determination

A mixing zone is not applicable to this project as no violation of applicable water quality standards is expected during construction.

2) Determination of Compliance with Applicable Water Quality Standards

The proposed activity would not cause significant or long-term degradation of water quality within the DREB and would comply with all applicable water quality standards, if not improving water quality throughout the reach and downstream of the project area.

3) Potential Effects on Human use Characteristics

No significant impacts to municipal and private water supplies, water-related recreation, aesthetics, recreational, or commercial fisheries are expected. No known National Parks, National and Historic Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves are present. There are no significant adverse effects expected.

g. Cumulative Effects on the Aquatic Ecosystem

The proposed project would restore aquatic habitat structure and function. There are no significant adverse effects expected.

h. Secondary Effects on the Aquatic Ecosystem

No significant adverse impacts on the DuPage River ecosystem are expected as a result of the proposed activity.

III. Findings of Compliance with the Restrictions on Discharge

- a. No adaptation of the Section 404(b) (1) guidelines was made for this evaluation.
- b. No practical alternatives are available that produce fewer adverse aquatic impacts than the proposed plan.
- c. The proposed project would comply with applicable water quality standards.
- d. The project is in compliance with applicable Toxic Effluent Standards under Section 307 of the Clean Water Act; with the Endangered Species Act of 1973; with the National Historic Preservation Act of 1966; and with the Marine Protection, Research, and Sanctuaries Act of 1972.
- e. The proposed fill activity would have no significant adverse impact on human health or welfare, including municipal and private water supplies, recreational and commercial fisheries, plankton, fish, shellfish, or wildlife communities (including community diversity, productivity, and stability), special aquatic sites, or recreational, aesthetic, and economic values.
- f. No special measures were taken to minimize construction impacts other than selection of the least environmentally damaging construction alternative.
- g. On the basis of the Guidelines, the proposed site for the discharge of fill material is specified as complying with the requirements of these guidelines with the inclusion of appropriate and practical conditions to minimize pollution or adverse impacts to the aquatic ecosystem.

Date _____

Vincent V. Quarles
Colonel, U.S. Army
District Commander

DRAFT Finding of No Significant Impact

Morton Arboretum Section 206 Aquatic Ecosystem Restoration

Background

The study area is located in DuPage County, Illinois within the Morton Arboretum and FPDDC properties. The restoration reach is approximately a 2.5-mile reach of the DuPage River East Branch (DREB), between Butterfield Road and Interstate 88 in DuPage County, IL. The study area consists of a channelized ditch, pockets of floodplain marsh and floodplain forest and oak woodland. Man made features that intermingle and border the site include roads, bridges, ornamental plant groves, industrial facilities, railroads, strip malls and residential developments.

Historically, the DREB stream corridor and riparian zone was dominated by several naturally occurring cover types such as wetlands, forests, savannas and prairies. By the late 1800s, much of these cover types, particularly prairies, savannas and wetlands, were converted to agricultural, urban or industrial use. Subsequently, there was a significant loss of biodiversity within the last one hundred years and side effects such as an increase in flooding events and a decrease in water quality. Furthermore, the remnant parcels of natural cover types are under pressure from continued human activities. Human induced disturbances to the remaining natural areas include fire suppression, altered hydrology and hydraulics, increase colonization of invasive species and fragmentation. While cover types can be described in terms of dominant organisms, the quality of their habitat is directly related to the level at which natural processes function, such as groundwater discharge, fire or fluvial erosion and deposition. Habitat quality displays a negative relationship to the amount of human disturbance, in which the disturbance affects natural areas in direct or indirect ways. The purpose and need of this project is to address the following resource problems:

- Altered floodplain hydrology stemming from stream channelization & vegetation clearing
- Riverine geomorphic impairment from channelization
- Riverine hydraulic impairment from channelization
- Water quality impairment stemming from waste water discharge and urbanization
- Establishment of invasive species monocultures
- Loss of conservative and rare plant and fish species

Brief Summary of the EA & Preferred Plan

The environmental assessment identified the direct, indirect and cumulative effects of a set of measures that were part of fourteen (14) alternatives plans including the No Action plan. The National Ecosystem Restoration / preferred plan is a combination of Riverine Alternative 5 and Riparian Alternative 7.

The NER / Preferred Plan

In the recommended plan, the stream channel of the DuPage River East Branch will be restored to increase instream habitat structure. Riffles and boulder clusters will be placed in the channel to provide hydraulic diversity, instream habitat structure and to reduce erosion and channel widening by directing flow towards the middle of the channel. These habitat features will provide instream habitat for macroinvertebrates and fishes. Root wads will also be placed within the channel adding to the habitat structure and diversification of hydraulics. In addition to channel restoration, the stream banks

would be graded and terraced, stripped of invasive and non-native vegetation and replanted with appropriate native vegetation.

The NER plan also recommends for the restoration of native plant communities throughout the site. Approximately 112-acres of the project area will be eradicated of invasive and non-native vegetation via herbicide application and hand removal. Woody species will also be thinned in areas having dense canopy to allow sunlight to infiltrate the understory, hence allowing the growth of a rich herbaceous layer. In all, 8,750-feet of instream habitat, 3-acres of marsh, 51.6-acres of floodplain forest, and 27.7-acres of oak woodland will be restored with native vegetation indicative of these plant communities.

Discussion of Major Environmental Compliance

The plans presented in this Integrated Environmental Assessment are in compliance with appropriate statutes and executive orders including the Natural Historic Preservation Act of 1966; the Endangered Species Act of 1973; the Fish and Wildlife Coordination Act; Executive Order 12898 (environmental justice); Executive Order 11990 (protection of wetlands); Executive Order 11988 (floodplain management); and the Rivers and Harbors Act of 1899. The potential project is in compliance with the Clean Air Act; the Clean Water Act, and the National Environmental Policy Act of 1969.

Environmental Justice EO12898

To the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review, each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of the Mariana Islands. The NER Plan would not have any adverse effects to any minority populations and low-income populations.

Clean Air Act

Due to the small scale, short duration and unpolluted nature of the restoration project, it is assumed that the project is below the *de minimis* level of PM 100 tons per year. As a reference, other Chicago District projects that are much larger in scale and earthwork have GCA well below the PM 100 tons per year.

Section 404 of the Clean Water Act

A 404(b)(1) Determination was completed to assess effects of fill into the waters of the US (Attachment A). The current findings of compliance are as follows:

- No adaptation of the Section 404(b) (1) guidelines was made for this evaluation.
- No practical alternatives are available that produce fewer adverse aquatic impacts than the proposed plan.
- The proposed project would comply with applicable water quality standards.
- The project is in compliance with applicable Toxic Effluent Standards under Section 307 of the Clean Water Act; with the Endangered Species Act of 1973; with the National Historic

Preservation Act of 1966; and with the Marine Protection, Research, and Sanctuaries Act of 1972.

- The proposed fill activity would have no significant adverse impact on human health or welfare, including municipal and private water supplies, recreational and commercial fisheries, plankton, fish, shellfish, or wildlife communities (including community diversity, productivity, and stability), special aquatic sites, or recreational, aesthetic, and economic values.
- Measures will be taken to minimize construction impacts such as: construction sequencing, stone stabilizing materials, erosion control matting and coir logs, and rapidly revegetate disturbed earth.
- On the basis of the Guidelines, the proposed site for the discharge of fill material is specified as complying with the requirements of these guidelines with the inclusion of appropriate and practical conditions to minimize pollution or adverse impacts to the aquatic ecosystem.

Section 401 of the Clean Water Act

Compliance under 401 is being pursued with the Illinois Environmental Protection Agency (ILEPA). During the design phase, a 401 application will be submitted to ILEPA in which they will review the proposed plans and drawings. It is anticipated 401 Compliance will be awarded since instream features will improve water quality (riffles, boulder clusters, woody debris and native plantings).

State of Illinois Historic Preservation Act

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 4701) and 36 C.F.R. Part 800, the staff of the Illinois State Historic Preservation Officer (Illinois SHPO) has conducted an analysis of the materials dated 15 December, 2010 and received on 11 January, 2011. Based upon the documentation available, the staff of the Illinois SHPO has not identified any historic buildings, structures, districts, or objects listed in or eligible for inclusion in the National Register of Historic Places within the probable area of potential effects. Thusly, the SHPO has no objection to the work being performed under the NER Plan.

All areas affected by ground disturbance under this project have already been previously disturbed; thusly an archaeological survey is unnecessary. This is in congruence with the SHPO letter dated January 11, 2011, which is located in Appendix G.

State of Illinois Floodway Permitting

A State of Illinois Floodway permit will be required for placing instream structures for habitat improvement within the DuPage River East Branch. This permit would be acquired before construction would commence at some point during the plans and specifications phase as a joint application with the 401.

USFWS Coordination

Coordination with the USFWS commenced with a project scoping letter dated 15 December 2010. In a memorandum dated 07 March 2011, the proposed ecological restoration project was determined "no effects" Federally endangered species or their habitats. It is anticipated that upon review of this document, the USFWS would preclude the need for further consultation on the Morton Arboretum Section 206 restoration project as required under Section 7 of the Endangered Species Act of 1973, as amended. The intent of the NER Plan is to aid in the overall restoration of the DuPage River

watershed ecosystem, inclusive of threatened and endangered species. Coordination is documented in Appendix G.

Public Interest

An Environmental Assessment was completed for the proposed measures within the Morton Arboretum and Forest Preserve District of DuPage County parcels. A 30-day Public Review period was held from XX _____ 2011 to XX _____ 2011 for the Environmental Assessment. To be completed after review.....

Conclusion

In accordance with the National Environmental Policy Act of 1969 and Section 122 of the River and Harbor and Flood Control Act of 1970, the U.S. Army Corps of Engineers (Chicago District) has assessed the environmental impacts associated with this project. The purpose of this Environmental Assessment (EA) is to evaluate the impacts that would be associated with the restoration of several parcels within the Morton Arboretum and Forest Preserve lands. The proposed project has been determined to be in full compliance with the appropriate statutes, executive orders and USACE regulations, including the National Environmental Policy Act, the Endangered Species Act, the Fish and Wildlife Coordination Act, the National Historic Preservation Act, the Clean Air Act, Sections 401 and 404 of the Clean Water Act.

The assessment process indicates that this project would not cause significant effects on the quality of the human environment. The assessment process indicates that this project would have only beneficial impacts upon the ecological, biological, social, cultural, or physical resources of this area, and would provide environmental benefits to DuPage River and upper Illinois River watersheds as a whole. The findings indicate that that the proposed action is not a major Federal action significantly affecting the quality of the human environment. Therefore, I have determined that an Environmental Impact Statement (EIS) is not required.

Vincent V. Quarles
Colonel, U.S. Army
District Commander

Date: _____